Lake Mead National Recreation Area
Environmental Education

CLASSROOM PROGRAM

Grade 5
"Landforms in Motion"

THEME

The Hamblin-Cleopatra volcano at Lake Make National Recreation Area (NRA) provides an amazing case study of changes in landforms that result from movement of the earth's crust.

OBJECTIVES

Students will describe one way that extension has contributed to the formation of volcanoes in the Lake Mead NRA area.
Students will describe one way that faulting has shaped the landforms of the Lake Mead NRA area.
Students will read and interpret a geologic map using a simple key.

VOCABULARY

crust - the very thin outermost layer of the Earth
extension - stretching or lengthening of the Earth's crust
fault - a break in a rock mass along which movement has occurred
geology - the science that examines the Earth, its form and composition, and the changes that it has undergone and is undergoing
lava - molten rock that reaches the Earth's surface
magma - molten rock that is beneath the Earth's surface
volcano - a mountain formed from lava

BACKGROUND INFORMATION

Lake Mead National Recreation Area has had a very rich geologic history. At varying times in the last two billion years, the area that would become Southern Nevada has been a shallow sea, a shoreline, and a desert much drier than today. The rocks also record evidence of marshes and rivers, grasslands and tidal flats. This region has alternately been squeezed and stretched. More recently, within the last fifteen million years, periods of fiery volcanism have lasted for hundreds of thousands of years, interspersed with less geologically active times when erosion proceeded with its never-ending wearing away of the landscape unopposed by rising mountains of lava and ash.

A few of the more recent chapters of geologic activity are recorded along the north shore of Lake Mead in the Hamblin-Cleopatra volcanic complex. These mountains bear the scars of extension, or stretching, of the earth's crust and the volcanism and faulting that resulted.

BEFORE THE RANGER VISITS YOUR CLASSROOM

Take your students out into your school yard and have them look around. Can you see any mountains from your school? How do the students think the mountains in this area were formed?

AFTER THE RANGER VISITS YOUR CLASSROOM

Lake Mead National Recreation Area and southern Nevada have many kinds of landforms that we did not discuss in this program. Have your students research one of the others (e.g. Fortification Hill, Flamingo Wash, Temple Butte, a slot canyon). How was that landform created?

REFERENCES

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